Amendments to the Claims:

This listing of claims will replace all prior listings of claims in the application.

Listing Of Claims:

Claim 1 (currently amended):

A system for reaction of a nucleic acid comprising:

a reaction unit comprising

a nucleic acid probe array substrate having a nucleic acid probe immobilized in an array on a flat surface of the substrate,

a cover member for forming a chamber with a top surface of said substrate, wherein a liquid can be filled into the chamber, and

a heat conduction member for improving thermal diffusion in the liquid within said chamber, the heat conduction member being in contact with said substrate or said cover member; and

a temperature control block for controlling the temperature of said heat conduction member,

wherein said temperature control block includes a plurality of holes, and

wherein said heat conduction member including a leg, the leg is adapted to be inserted into and in close contact with one of the plurality of holes of said temperature control block located on a back surface of said substrate, and the temperature control block being in contact with said substrate or said cover member.

Claim 2 (previously presented):

A system for reaction of a nucleic acid according to claim 1, wherein said temperature control block is a heat block adapted to receive a microtube.

Claim 3 (previously presented): The system according to claim 1, wherein said heat conduction member is formed of metal, resin or a composite of metal and resin.

Claim 4 (withdrawn): A method for detecting genes by utilizing as a detection means a substrate to the substrate surface of which a plurality of nucleic-acid probes containing single-stranded nucleic acid fragments having a complementary sequence in respect to a target DNA have been immobilized in order that the target DNA contained in a specimen is detected according to hybridization; the method comprising:

disposing a heat-conductive material on the back of the substrate to the substrate surface of which the plurality of single-stranded nucleic acid fragments have been immobilized, and in contact with the back of the substrate;

disposing a heater or a cooler in contact with the heat-conductive material; and

providing a temperature controller for controlling the amount of heat flowing across the heater or cooler and the heat-conductive material to control the temperature of the heat-conductive material;

the detection being operated while the substrate standing bonded sandwichedly and the specimen standing in contact with the substrate surface are temperature-controlled

through the temperature control of the heat-conductive material by the temperature controller during the operation of gene detection.

Claim 5 (withdrawn): The method according to claim 4, wherein, in a plurality of steps involved in the gene detection operation, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said heater.

Claim 6 (withdrawn): The method according to claim 4, wherein, in a plurality of steps involved in the gene detection operation, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said cooler.

Claim 7 (withdrawn): The method according to claim 4, wherein, as said heat-conductive material, which is utilized for the temperature control the substrate and of the specimen standing in contact with the substrate surface, a heat-conductive material is used which is formed of any one of a metal and a resin or a composite of these two or more.

Claim 8 (withdrawn): A method for detecting genes by utilizing as a detector a substrate to the substrate surface of which a plurality of nucleic-acid probes containing single-stranded nucleic acid fragments having a complementary sequence in respect to a target

DNA have been immobilized in order that the target DNA contained in a specimen is detected according to hybridization; the method comprising:

disposing a heat-conductive material on the surface of the substrate to the substrate surface of which the plurality of single-stranded nucleic acid fragments have been immobilized, facing, and in contact with, the substrate surface, partly leaving a space for feeding the specimen thereinto;

disposing a heater or a cooler in contact with the heat-conductive material; and

providing a temperature controller for controlling the amount of heat flowing across the heating means or cooling means and the heat-conductive material to control the temperature of the heat-conductive material;

the detection being operated while the specimen fed into the space and the substrate surface, which are in contact with the heat-conductive material, being temperature-controlled through the temperature control of the heat-conductive material by the temperature controller during the operation of gene detection.

Claim 9 (withdrawn): The method according to claim 8, wherein, in a plurality of steps involved in the gene detection operation, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said heater.

Claim 10 (withdrawn): The method according to claim 8, wherein, in a plurality of steps involved in the gene detection operation, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said cooler.

Claim 11 (withdrawn): The method according to claim 8, wherein, as said heat-conductive material, which is utilized for the temperature control of the substrate and the specimen standing in contact with the substrate surface, a heat-conductive material is used which is formed of any one of a metal and a resin or a composite of these two or more.

Claims 12-15 (canceled).

Claim 16 (previously presented): The system according to claim 2, wherein said heat conduction member is formed of metal, resin or a composite of metal and resin.

Claim 17 (previously presented): A reaction unit for use in the system for reaction according to claim 1.